ST – 2350 RES

SATA RAID

User Manual

New revolution of 5-bay Raid Enclosure

Contents

1.Features of product 3
2.DIP Switch and RAID Mode cross reference 5
2.1 RAID 0 for High Performance 5
2.2 RAID 1 (Mirror) for High Security 6
2.3 Stripe + Mirror (RAID 10) for High Performance and High security 6
2.4 Clone 7
2.5 JBOD (Concatenating)..... 7
2.6 Parity Protection.....8
2.7 Normal Mode (Single).....8

1. Features of product

- **Aluminum Frame, Aluminum cover**
- **Interface support SATA-I, SATA-II, SATA-III**
- **High performance transfer rate up to 1.5Gbps, 3.0Gbps**
- **Plug & play ,hot swappable**
- **AC Power control**
- **Easy RAID setting by DIP switch & apply (change mode) switch**
- **LED indicators(for System Ready ,HDD Error, HDD Access, Temperature ,fan)**
- **8x8 Fan X 2— High/Low speed selectable**
- **Reset switch or OTB switch for option**
- **Color: BLACK**
- **Dim:215(L)x156(W)x211(H)mm**
- **Patent products with advanced structure design**
- **Patent balance handle ---no skew in/out problem and avoid the abrasion during connection**
- **Precisely connection on connector (see Figure 1)**

Figure 1

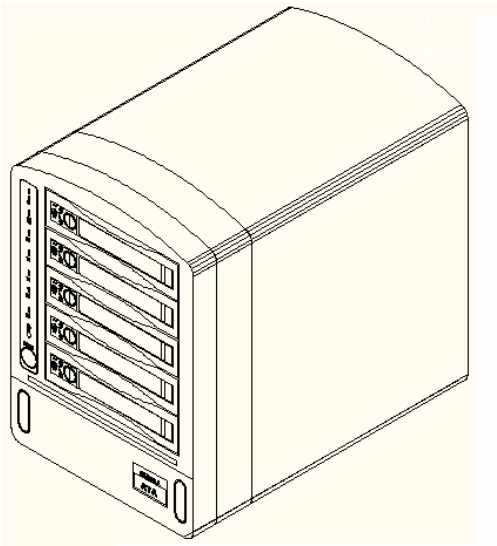


Figure 2

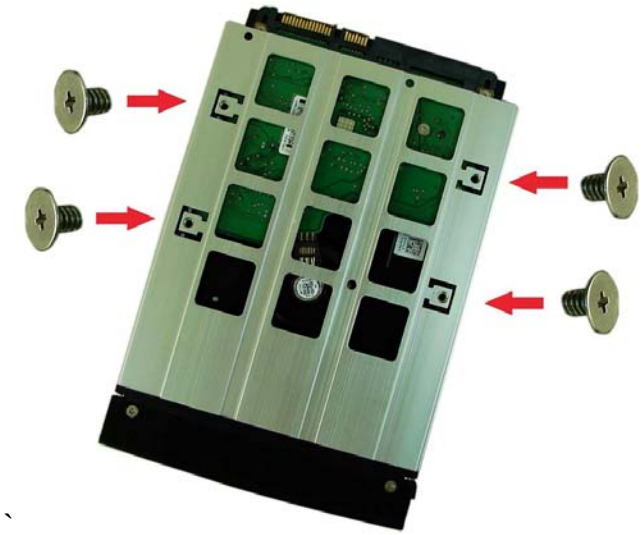


Figure 3

---Front Panel---(see Figure 4)

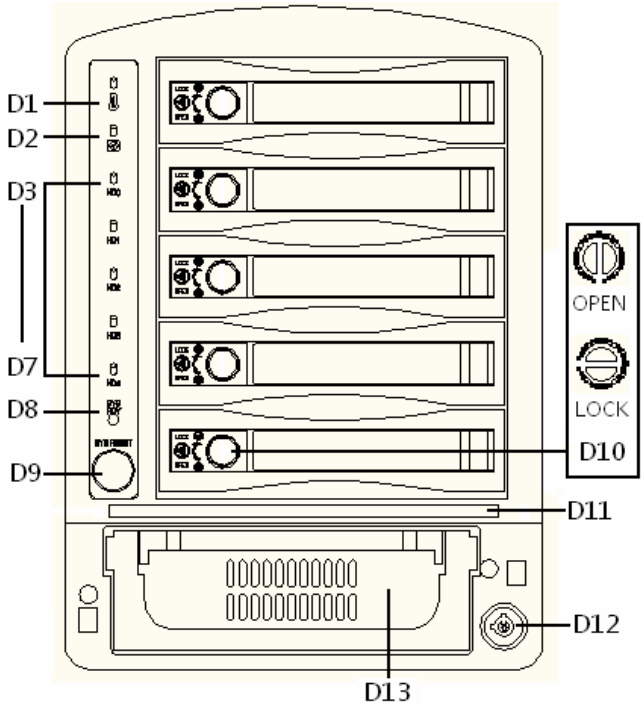


Figure 4

D1:Temperature LED [Normal : Green, Failed :Red]

D2:Fan LED : [Normal : Green, Failed :Red]

D3---D7: LED for HDD Access and failure (Green LED lights on while HDD is linking. And Green LED is blinking while HDD accessing. The LED will turn red when HDD failed. The green LED and red LED will alternate blinking during rebuilding)

D8:SYS LED: Light ON while system is ready

D9:SYS Reset / or Backup (option)

D10:HDD Safety Lock

D11:Power LED

D12:Power Safety Lock (It prevents the handle bouncing out while HDD is working)

D13: Power Supply 120W (AC 100~240V, 50/60Hz Auto Switching

---Rear View---(see Figure 5)

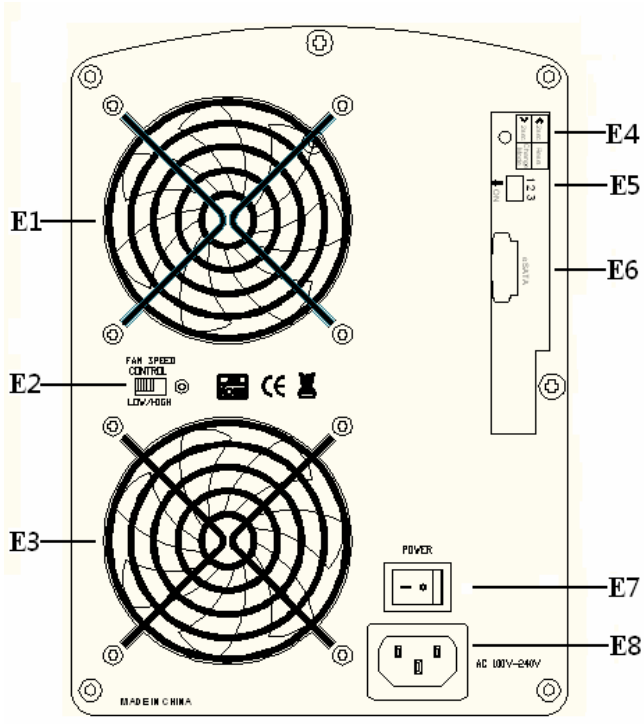


Figure 5

E1: Upper Cooling Fan (8x8cm)

E2: Fan Speed Control Switch:

--FAN RPM HIGH(3600rpm)&

--FAN RPM LOW(2800 rpm)

Options to run at high speed or low speed.

E3: Lower Cooling Fan (8x8cm)

E4: Reset/Change Mode

***Push the button less than 2 seconds for system reset**

***Hold to press the button for over 2 seconds to apply new RAID mode)**

E5: RAID Configure Switch

E6: ESATA Port

E7: Power Switch

E8: Power Input(AC 100V~240V)

2. DIP Switch and RAID Mode cross reference

User can configure any RAID mode as below by DIP switch and apply change by change mode switch.

RAID Mode	Dip Switch		
	1	2	3
RAID 0(Single)	ON	ON	ON
RAID 10	ON	ON	OFF
JBOD (Large)	ON	OFF	ON
RAID 3	ON	OFF	OFF
Clone	OFF	ON	ON
RAID 5	OFF	ON	OFF
Reserved	OFF	OFF	ON
Normal (Single)	OFF	OFF	OFF

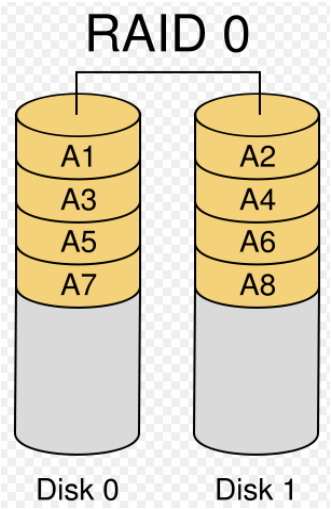
Note: When DIP Switch is set to RAID 10 ----

*If you installed two HDD only, it is with RAID 1 mode

*If you installed four HDD, then, it is RAID 10 mode

2.1 RAID 0 for High Performance

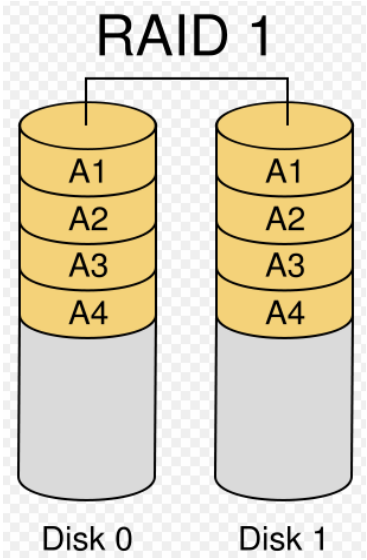
RAID 0(or Stripe) is the segmentation of logically sequential data, such as a single file, so that segments can be assigned to multiple hard disks in a round-robin fashion and thus written concurrently. (if any one hard disk gets defective, information stored in this RAID 0 mode will be invalid.)



2.2 RAID 1 (Mirror) for High Security

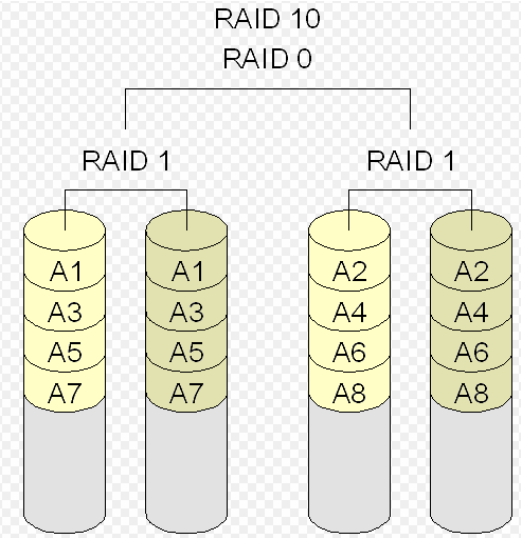
RAID 1 (or Mirror) is the replication of data onto separate hard disks in real time to ensure continuous availability. Take a RAID 1 system with two hard disks as an example, data in a hard disk will be exactly the same as the data in another hard disk.

(Failure in a hard disk, Host controller still could read/write data. Users have to replace the defective hard disk. 2350RES will enter identical-rebuild mode automatically)



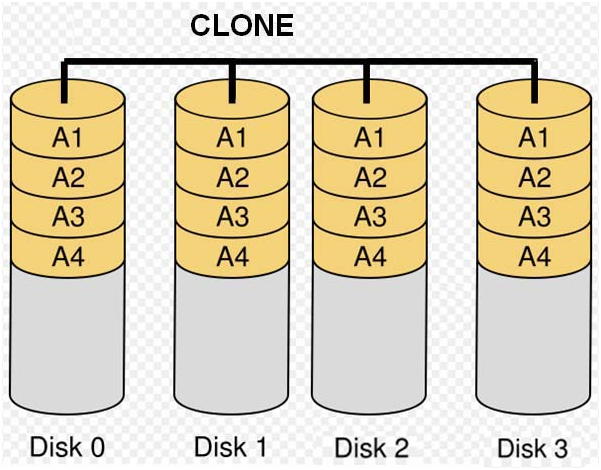
2.3 Stripe + Mirror (RAID 10) for High Performance and High Security

2350RES could be configured to support Stripe and Mirror at the same time, i.e. RAID 10. Take four hard drives RAID 10 as an example. Hard drive 0 and hard drive 1 could act as Mirror 1 and hard drive 2 and hard drive 3 could act as Mirror 1 too. Then, 2350RES configures these two Mirrors as Stripe.



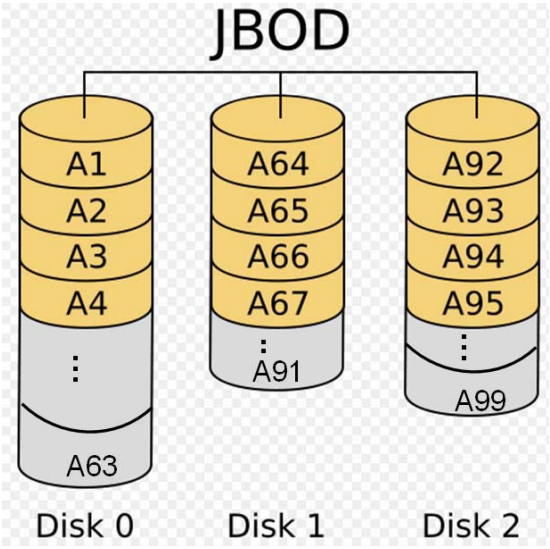
2.4 Clone

This mode is useful especially when users would like to copy data from a hard drive to several hard drives at the same time. Clone's action is similar to RAID 1. However, all of the hard disks will be the mirrors. For example, in a four hard drives Clone environment, data in each hard drive will be same.



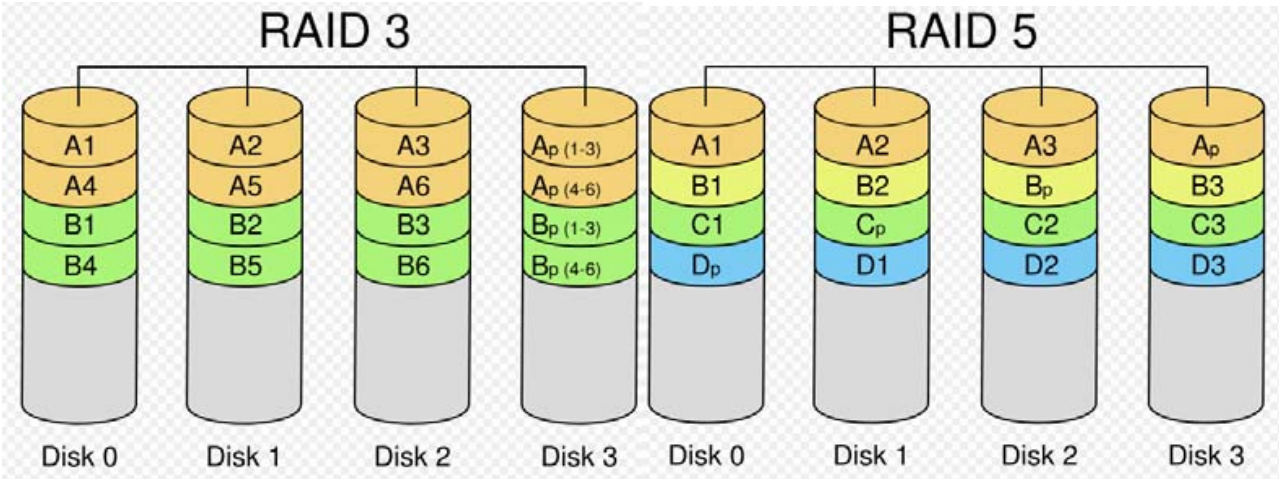
2.5 JBOD (Concatenating)

This mode is also named Concatenating. In this mode, 2350RES will concatenate all of the hard drives into a single hard drive with larger capacity. For example, if three 500GB hard disks is connected to 2350RES in concatenating mode, user will get a single hard disk with capacity of 1,500 GB.



2.6 Parity Protection

XOR engine in 2350RES generate parity block. In RAID 3 mode, Parity Block will be stored in the same hard drive. While in RAID 5 mode, Parity Block will be spread over all of the different hard drives.



2350JMR will also make use of same size disk space in each hard disk under RAID 3/5 condition. (In RAID 3 or 5 mode, failure in a hard disk will cause ST-2350RES enter degraded-mode. Host controller still could read/write data through 2350RES normally without knowing any defects. Users have to replace the defective hard disk. 2350RES then will enter identical-rebuild mode automatically.)

2.7 Normal Mode (Single)

Normal mode means all of the configured hard drives exist and 2350RES is not in rebuild condition. User can see the original hard drives from the host which supports port multiplier technology.

(Note: If the host does not support port multiplier, then you will find only one hard drive on operating system. The RAID tool is useful in this case.)